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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/551,275

09/28/2005

Tetsuya Takahashi

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EXAMINER

GOFF II, JOHN L

ART UNIT

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1791

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,275	Applicant(s) TAKAHASHI, TETSUYA	
	Examiner John L. Goff	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/18/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed on 12/18/07.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Goto et al. (JP 2000-173562 and see also the machine translation and abstract).

Goto discloses a method of manufacturing an electrochemical device such as an electrolyte battery with an improved seal at the leads comprising an electrochemical device matrix (22 and 24 of Figure 3) including first and second electrodes opposing each other, a case formed by first and second films (1 of Figure 1) opposing each other for accommodating the electrochemical device in a closed state, a first lead (4 of Figure 1) having one end part connected to the first electrode and the other end part projecting out of the case, and a second lead (4 of Figure 1) having one end part connected to the second electrode and the other end part projecting out of the case, arranging the first and second films such that respective fringes thereof are in contact with each other between a pair of heating members (5 of Figure 1) opposing each other, heating at least one of the pair of heating members while a contact portion of the fringes is pressed so as to thermally fuse the first and second films to each other and wherein at least one of the pair of heating members is formed with grooves (6 of Figure 1) having trapezoidal cross sections at a part where the first and second leads are placed

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between the fringes of the first and second films and a width of a bottom of the grooves is larger than a width of the first and second leads (Figures 1-3 and Paragraphs 0003 and 0017-0021).

Regarding claim 7, Goto teaches the first and second films are a composite package film comprising at least an innermost layer made of a synthetic resin (3 of Figure 1) considered in contact with an electrolytic solution of the battery and a metal layer disposed above the innermost layer (2 of Figure 1) (Figure 1 and Paragraphs 0016).

Claim Rejections - 35 USC § 103

4. Claims 1, 2, and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroshi (JP 2000-294221 and see also the machine translation) in view of Goto, and in the alternative, Goto in view of Hiroshi.

Hiroshi discloses a method of manufacturing an electrochemical device such as an electrolyte battery that is light-weight and safe comprising providing a case formed by first and second films opposing each other for accommodating the electrochemical device in a closed state, an electrochemical device matrix (1 of Figure 1) including first and second electrodes having a flat form and containing an electronically conductive porous body as a constituent material, a separator made of an insulative porous body having a flat form, and an electrolytic solution that fills the case such that the electrolytic solution is at least partly contained in the first and second electrodes and the separator, a first lead (5 of Figure 1) having one end part connected to the first electrode and the other end part projecting out of the case, a second lead (6 of Figure 1) having one end part connected to the second electrode and the other end part projecting out of the case, arranging the first and second films such that respective fringes

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thereof are in contact with each other, and thermally fusing (A' of Figure 1) the first and second films to each other (Figures 1 and 2 and Paragraphs 0030-0042). Hiroshi is silent at to performing the thermal fusing by arranging the first and second films such that respective fringes thereof are in contact with each other between a pair of heating members opposing each other at least one of the pair of heating members formed with grooves having trapezoidal cross sections at a part where the first and second leads are placed between the fringes of the first and second films and a width of a bottom of the grooves is larger than a widths of the first and second leads. As described in full detail above, Goto discloses a method of manufacturing an electrochemical device such as an electrolyte battery using a pair of heating members that provide an improved seal at the leads. It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the thermal fusing as taught by Hiroshi using the method shown by Goto including using a pair of heating members formed with grooves to form the electrolyte battery with an improved seal at the leads. In the alternative, Goto does not require any particular electrochemical device matrix such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the electrochemical device matrix taught by Goto the electrochemical device matrix shown by Hiroshi to form a light-weight and safe electrolyte battery.

Regarding claims 2 and 5, Hiroshi teaches the leads are made of metal each having a thickness of 100 μm and a cross-sectional area of 30 mm^2 (Paragraph 0037 and 0038).

Regarding claim 7, Hiroshi teaches the first and second films are a composite package film comprising at least an innermost layer made of a synthetic resin (12 of Figure 2) considered

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in contact with an electrolytic solution of the battery and a metal layer disposed above the innermost layer (11 of Figure 2) (Figure 21 and Paragraphs 0041).

5. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroshi and Goto in view of Yoshie et al. (JP61-198550 and see also the abstract).

Hiroshi and Goto as applied above teach all of the limitations in claims 3 and 4 except for a specific teaching that a portion coming into contact with the first and second leads in the fringe to be thermally fused in at least one of the first and second films is deformed by drawing beforehand so as to have respective forms and sizes in conformity to forms and sizes of cross sections of the first and second leads. Yoshie discloses a method of manufacturing an electrochemical device such as an electrolyte battery that that has accurately centered leads wherein the case has a preformed shape in the fringe (8d and 8d' of Figure 1) having forms and sizes in conformity to forms and sizes of cross sections of the first and second leads connected to first and second electrodes of an electrochemical device matrix before the leads are secured to the case (Figure 1 and the abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the fringe regions of the first and second films taught by Hiroshi as modified by Goto or Goto as modified by Hiroshi a deformed region having forms and sizes in conformity to forms and sizes of cross sections of the first and second leads as shown by Yoshie to accurately center the leads.

6. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroshi and Goto in view of Fukuda et al. (U.S. Patent 6,877,216).

Regarding claims 8 and 9, Hiroshi and Goto as applied above teach all of the limitations in claims 8 and 9 except for a specific teaching of an adhesive made of a synthetic resin applied

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beforehand to a surface portion of the first and second leads before thermal fusion is carried out. Fukuda discloses a method of manufacturing an electrochemical device such as an electrolyte battery with an improved hermetic seal at the leads comprising an electrochemical device matrix (3 of Figure 4(d)) including first and second electrodes opposing each other, a case formed by first and second films (5t and 5p of Figure 4(d)) opposing each other for accommodating the electrochemical device in a closed state, a first lead (4 of Figure 4(d)) having one end part connected to the first electrode and the other end part projecting out of the case, and a second lead (4 of Figure 4(d)) having one end part connected to the second electrode and the other end part projecting out of the case, arranging the first and second films such that respective fringes thereof are in contact with each other between a pair of heating members (10a and 10b of Figure 1) opposing each other, heating at least one of the pair of heating members while a contact portion of the fringes is pressed so as to thermally fuse the first and second films to each other and wherein at least one of the pair of heating members is formed with grooves (11 of Figure 1) having cross sections at a part where the first and second leads are placed between the fringes of the first and second films and a width of the bottom of the grooves is larger than a width of the first and second leads (Figures 1 and 4 and Paragraphs 0038-0040, 0042, 0044, and 0045). Fukuda further teaches an adhesive (6 of Figure 9) made of a synthetic resin is applied before the thermal fusion step is carried out to a surface portion of the first lead coming into contact with the fringe of the first film to be thermally fused and the fringe of the second film to be thermally fused and to a surface portion of the second lead coming into contact with the fringe of the first film to be thermally fused and the fringe of the second film to be thermally fused where the adhesive comprises acid-denatured polypropylene or acid-denatured polyethylene, and

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the adhesive is applied to ensure the device is sealed (Figure 9 and Paragraphs 0087 and 0088).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Hiroshi as modified by Goto or Goto as modified by Hiroshi an adhesive made of a synthetic resin applied beforehand to a surface portion of the first and second leads before thermal fusion is carried out as shown by Fukuda to ensure the device is sealed.

Regarding claim 10, Hiroshi and Goto as applied above teach all of the limitations in claim 10 except for a specific teaching of only one of the heating members is formed with the grooves and the second heating member has a planar surface, it being noted that while Goto depicts both heating members as including the grooves Goto is not considered limited to such an arrangement. It is considered functionally equivalent that both of the heating members include the grooves or only one of the heating members is formed with the grooves with the second heating member having a planar surface as evidenced by Fukuda (Paragraph 0039). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the grooves as taught by Hiroshi as modified by Goto or Goto as modified by Hiroshi on both of the heating members or only one of the heating members with the second heating member having a planar surface as such was considered functionally equivalent in the art for achieving the same as evidenced by Fukuda.

Response to Arguments

7. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Claim 1 as amended requires “wherein at least one of the pair of heating members is formed with grooves having trapezoidal cross sections at a part where the first and second leads are placed between the fringes of the first and second films, and a width of a bottom of the grooves is larger than a width of the first and second leads.”. The new limitation is fully addressed above.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John L. Goff/
Primary Examiner, Art Unit 1791

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